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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,518	07/05/2001	Gennadiy G. Kolomeyer	07050.0009UI	9909

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ATLANTA, GA 30309-3915

EXAMINER
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BROWN, JENNINE M

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 11/19/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/899,518

Applicant(s)

KOLOMEYER ET AL.

Examiner

Jennine M. Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) <sup>29</sup>~~1-4~~ is/are pending in the application.
- 4a) Of the above claim(s) 5-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election with traverse of claims 1-4 in Paper No. 8 is acknowledged. The traversal is on the grounds that the Examiner has not shown a serious burden would be required to examine all the claims, irrespective of whether the groups requested are independent and distinct inventions. This is not found persuasive because 37 CFR 1.142 states "for purposes of the initial requirement, a serious burden on the examiner may be prima facie shown if the examiner shows by appropriate explanation of separate classification, or separate status in the art, or a different field of search as defined in MPEP § 808.02." A prima facie burden has been shown by separate classification as presented previously in the Detailed Action of 06/20/2003.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 5-29 drawn to an invention nonelected with traverse in Paper No. 8. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, Applicants require "at least one activator/modifier comprising at least one phenolic compound, wherein the activator/modifier is present in an amount effective to improve the activity and/or selectivity of the primary catalyst in the rearrangement of a desired epoxide to an allylic alcohol as compared to the use of the primary catalyst without the activator/modifier". The primary catalyst can be at least one homogeneous, heterogeneous, inorganic, organic or complex metal containing compound but it is unclear as to whether the activator/modifier is required or comprised as part of the catalytic composition. The first part of the claim states that the activator/modifier *is present* and the amount is enough to be effective to improve the activity/selectivity of an epoxide rearrangement process when compared to a catalyst without the activator/modifier. The catalyst is not claimed where the activator/modifier is not present or optional and merely recites that the modified catalyst distinguish over prior art which does not use an activator/modifier compound.

In contradiction to claim 1, claim 4 states that "the primary catalyst is at least one compound that *is inactive* in the rearrangement of epoxides in the absence of the activator/modifier." According to claim 1, *the activator/modifier is required to improve the activity and/or selectivity* of the primary catalyst in the rearrangement of the desired epoxide to an allylic alcohol. How can the activator/modifier be required in the

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primary claim and yet be absent in the dependent claim? A catalyst can be defined as a compound that is required to lower the activation energy barrier of a reaction process yet not be consumed in said reaction process in order for said reaction to proceed. If the "primary catalyst compound" is inactive, how can it be considered a catalyst in the primary claim? A catalyst system can have a catalyst precursor or precatalyst which reacts with other components to make the catalyst and are usually optional such that the precatalyst will not work without the optional components in a catalytic manner.

### ***Specification***

Examiner has entered Applicants amendment of the abstract, which obviates Examiners previous rejection, therefore this rejection has been withdrawn.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Hofmann, et al (US 6093793).

Hofmann, et al. teach it is known that base catalyzed rearrangement of epoxides takes place as a side reaction and yields *allyl or propenyl alcohols* as a generally

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undesirable side reaction (col. 1, l. 14-28). Perfluorosulfonic acid salts of a Group IIIA metal were used as a catalyst for producing polyether compounds and it is known that using accelerators will produce more of the undesirable side reaction (col. 2, l. 54-59; col. 3, l. 3-10). Starter compounds are taught (hydroxyl or thiol and or amino groups like ethylene glycol, aniline, ammonia and diethylene amine; col. 3, l. 33-47). The metals suitable for the catalyst are listed (col. 3, l. 48-57).

### ***Response to Arguments***

Applicant's arguments filed 08/18/2003 have been fully considered but they are not persuasive.

1. The MPEP states "for anticipation under 35 U.S.C. 102 the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." Although used for a materially different process, the catalyst as claimed is taught by Hofmann, et al. as described above. Applicant's disclosure states that the allyl alcohol is an intermediate used in the process of alpha beta unsaturated carbonyl compounds when oxidized and can be performed simultaneously as a parallel independent processes (specification p. 12, l. 12-15). This intermediary step is analogous to the side reaction of allylic alcohol to form propenyl alcohol, which is further reduced to make polyether polyols and disclosed in the Hofmann reference above.

2. The argumentation for Hofmann disclosing the potential for certain accelerators for low molecular weight cyclic ethers is flawed since cyclic ethers are also

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known as epoxides or oximes which are reacted with the catalyst and are capable of making allylic alcohols by favoring the side reaction rather than the primary reaction. Because the allylic alcohol side reaction is known although not desired in the process described by Hofmann, the catalytic compositions are equivalent and would imply that one could make the allylic alcohols through a process favoring the side reaction. The catalyst does not exclude any catalyst capable of making a different product through a materially different process, only allows for there to be one or more primary catalyst and one or more activator/modifier compounds.

3. Lastly, if the phenolic activator/modifier is part of the catalyst system as argued, it would also be able to be separately recoverable from the products obtained which is not the case as is seen in the examples given in Applicant's specification (Examples 58, 63-64), therefore the activator/modifier is not truly a catalyst component, merely a reactant that is added in minute amounts to the catalyst to produce the allylic alcohol. The addition of more zinc octoate (3 parts) and cyclohexanone (190 parts) in the system could change the reaction from catalytic to non catalytic. Ketones can be converted to the appropriate alcohol and/or have ring opening metathesis based on acid or base catalysis therefore the phenolic compound may not truly be the activator/modifier instead it may be a ketone mediated activator/modifier.

***Relevant Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

WO 95/25079 teaches epoxides containing hydroxy groups are rearranged enantioselectively using a chiral base to give allyl alcohols in high enantiomeric excess using dilithiated (1R, 2S) norephedrine.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennine M. Brown whose telephone number is (703) 305-0435. The examiner can normally be reached on M-F 8:00 AM - 6:00 PM; first Friday off.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell can be reached on (703) 308-3823. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

After the move to the new USPTO Headquarters in Alexandria, VA, tentatively scheduled for the week of December 22, 2003, the examiner's new phone number will be (571) 272-1364 and Mr. Bell's new phone number will be (571) 272-1362.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
**Mark L. Bell**  
**Supervisory Patent Examiner**  
**Technology Center 1700**

jmb